

SERIAL NO: 09/826,225

ATTORNEY DOCKET NO.: P1029

28. The process according to claim 24 wherein said sufficient amount of pressure comprises at least 60 MPa.
29. The process according to claim 20 wherein said sufficient amount of pressure comprises at least 60 MPa. - -

REMARKS

The Applicants respectfully request reconsideration in view of the amendment and the following remarks. Claims 1-6 and 16-29 are now pending. Claims 7-15 were previously canceled. Claim 4 was amended and claims 16-29 were added to the application.

Section 112, Second Paragraph Rejection

Claims 4-6 were rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant has amended claim 4 in a manner responsive to the Examiner's comments. For the above reason this rejection should be withdrawn.

Prior Art Rejections

Claims 1-6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sauzade et al. in view of Shane et al. According to the Examiner, Sauzade et al. discloses the basic claimed process for making a graphite article by forming a laminate of a plurality of sheets of graphite and directionally aligning them by pressing. The Examiner admits that Sauzade et al. lacks a clear disclosure that the graphite sheets would be flexible and the calendaring process to make them. In making these assertions the Examiner pointed to column 2, line 58- column 3, line 9 of Sauzade et al.

The Examiner alleged that Shane et al. discloses the aforementioned aspects of Sauzade et al., pointing to column 10, line 73 through column 11, line 30 and column 13, lines 10-11 and 46 of Shane et al. The Examiner opined that one of ordinary skill in the art would have incorporated the above disclosure of Shane et al. into the method of Sauzade et al.

The claimed invention of claim 1 is nonobvious and patentable for the reason that the claimed invention results in a graphite article that has one or more properties that is unexpected

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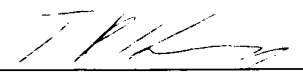
or surprising in relation to either one of the cited references. Sauzade et al. discloses that the in plane conductivity of the graphite article is more than 200 W/°Cm, *see* column 3, lines 10-13 and column 4, lines 22-28. Shane et al. discloses that the in-plane conductivity of the flexible graphite sheet is less than 260 W/°Cm, *see* column 13, lines 19- 23 of Shane et al. A graphite article made in accordance with claim 1 has an in-plane thermal conductivity of about 450 W/°Cm, *see* pages 13, lines 13-21.

This was unexpected and surprising for at least the reason that the graphite article made in accordance with the invention of claimed 1 had a in-plane thermal conductivity similar to or better than that of a heat sink made of cooper (about 400 W/°Cm). Prior to this graphite articles could only be manufactured to have an in-plane thermal conductivity equal to the in-plane thermal conductivity of aluminum (around 240 W/°Cm). Thus, the claimed invention resulted in an improvement in the in-plane thermal conductivity of 50% or more over the cited references (the closet prior art). In light of the above-unexpected property of a graphite article made in accordance with the invention, the Applicants request that the Examiner withdraw the rejection to claims 1-6 based on the references.

A petition for a two-month extension is attached. If there are any additional fees due in connection with the filing of this response, including any fees required for an additional extension of time under 37 C.F.R. 1.136, such an extension is requested and the Commissioner is authorized to charge or credit any overpayment to Deposit Account No. 50-1202.

For the reasons set forth above, Applicants believe that the claims are patentable over the references cited and applied by the Examiner and a prompt and favorable action is solicited. The applicants believe that these claims are in condition for allowance, however, if the Examiner disagrees, the applicants respectfully request that the Examiner telephone the undersigned.

Respectfully submitted,
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Marked Up Version of the Claims

In The Claims

4. (amended) The process of claim 3 wherein the graphene layers of the flexible graphite sheets which make up the laminate are subjected to the application of pressure prior to the formation of the laminate, by increasing the pressure applied to the sheets during a the calendering process.